

NATS (EN ROUTE) PLC SIP: INDEPENDENT REVIEWER REPORT

■
Review of SIP21

24 March 2021

Released to CAA

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SCOPE OF THE ASSESSMENT

The requirements on the content and scope of the service and investment plans, interim service and investment plans and associated Independent Reviewer assessments have been put forward in Condition 10 Article 9 of the NERL License.

SIP REQUIREMENTS

SCOPE:

The scope of the SIP as defined by the NERL License: provide an update of the Licensee's investment plans, including its technology and airspace programmes.

PROGRESS:

The documents shall provide an update of the Licensee's delivery of the investment plans, as measured against the capital expenditure programme milestones set out in the Licensee's business plan and as amended to be consistent with the price controls in Conditions 21, 21a and 22.

MATERIAL CHANGES:

The documents shall provide an update of material changes in the Licensee's expectations as to the level and quality of the services it will provide, the means by which the services will be provided, and the likely implications for charges to Users beyond the expiry of the period for which charges are for the time being set pursuant to the Charge Control Conditions. Service and Investment plans shall include such information as is reasonably necessary to achieve this including, but not limited to, material changes in the Licensee's expectations as to its operating practices and resources.

The SIP is prepared in the context of the Business Plan.

SIP release schedule

- Annual SIP, not later than 31st January;
- Interim SIP not later than 31st July;
- Updates to SIPs 30th April and 31st October.

Responsibilities of the Independent Reviewer

The CAA may appoint an Independent Reviewer to report on the Licensee's delivery of and engagement on its capital expenditure programme. The reports shall:

- a) review the timeliness and accuracy of the Licensee's reporting in its service and investment plans;
- b) assess whether the Licensee has sufficiently explained and justified its capital expenditure programme in its service and investment plans;
- c) assess and propose scores for the Licensee's engagement with Users against the assessment criteria referred in paragraph 8 and the CAA's guidance;
- d) track and assess the Licensee's progress on delivering its capital expenditure programme and achieving the associated benefits; and
- e) report on the cost efficiency of the Licensee's capital expenditure and its implementation.

The scope of this report is limited to points a), b) and d). Point c) will be reported upon separately, and point e) will be addressed on request from the CAA.

SIP21

Introduction

Overview

- Due to COVID-19, NERL is currently in the process of revising their investment plan and producing a “capex baseline”. This was not available with SIP21 so it was not possible to track and assess NERL’s progress against its capex programme.
- This report also marks the first assessment carried out by the new Independent Reviewer [IR], conducted against the unstable industry outlook caused by COVID-19. The contract for the IR role was placed after NERL had already conducted much engagement and planned. As such it has been agreed between NERL, CAA and the IR, that the review of this SIP will act as a ‘dummy run’ for future IR reviews.
- At the SIP update in April 2021, NERL will provide the final capex baseline for 2022. NERL anticipates that at iSIP21, it will provide 24 months forward look.

Contents

- In the following sections we provide feedback on the overall appropriateness of the information provided to the users for each of the capital investment programme, and then on each programme in turn:
 - Sustainment
 - Airspace
 - Oceanic
 - D-SESAR.
- We then provide commentary on the engagement criteria that will be scored in the future. Finally we present the conclusions and recommendations.

*References in this document, unless otherwise specified, relate to the Final SIP 2021 document.
The format is: [Page number] or [Page number. Paragraph number]
Eg [20] references page 20 of SIP21 and [20.5] references page 20 paragraph 5 of SIP21.*

SIP21

High-level comments

High-level comments:

- I. Licence Condition 10 paragraph 1 states "The Licensee shall prepare a full business plan fulfilling the requirements of paragraph 3 of this Condition." Recognising the extraordinary situation caused by COVID-19, we do not propose that an updated version of the RP3 business plan be produced. However, NERL will need to demonstrate how the requirements of Condition 10 (particularly paragraph 3) are satisfied by the various documents at hand, i.e. SIP21, capex baseline and the RP3 Business Plan (published October 2018). For example, to meet 3a) a description is needed of "the demands, in terms of the volumes of flights, which the Licensee forecasts that it will be required to serve". Because of the current volatility in the sector, we do not expect a traditional forecast but something more flexible.
- II. We support the decision to establish a new 2021 RP3 capex baseline, but it will be important to show the traceability (changes of activity scope, timing, budget) of the RP3 programmes back to what was included as part of the RP3 Business Plan, to ensure the SIP satisfies the requirements of Condition 10 (paragraph 5). There is a description in SIP21 of the changes to the DP En Route programme but not of other programmes such as Facilities Management (FM). The following example illustrates the issue: SIP21 FY21 budget for FM is £30M [63]. In the RP3 Business Plan, the planned 2021 spend was £18M (see below). The increase is not explained.
NERL has explained that the £30M is for a 27-month period and acknowledged it could have been clearer. It has stated that it will ensure a dedicated check for financial correctness is conducted before future SIP releases.

Business Resilience Programme capex (2017 prices)	2020 £m	2021 £m
FM	11	11
IS	11	7
Total	22	18

RP3 Business Plan showing FM planned spend for 2021

- III. The SIP is required to describe "material changes in the Licensee's expectations as to the level and quality of the services it will provide, the means by which the services will be provided, and the likely implications for charges to Users beyond the expiry of the period for which charges are for the time being set pursuant to the Charge Control Conditions." (NERL Licence, Condition 10, 5(c))

We recognise the challenge of this for NERL in the current environment and also that NERL "anticipates presenting a formal [traffic] forecast at iSIP21". Nevertheless, there is no indication of what traffic levels (or range) for which NERL is currently planning and what would be the expected service levels provided at these traffic these levels. Given current uncertainties, it would also be valuable for NERL to describe the impact of deviation outside this range. For example, the traffic increase under which NERL would become staff limited in its service provision. As noted in I, we do not expect a traditional forecast but still recommend documenting the assumptions for planning purposes.

SIP21 also does not consider the implications on charges beyond the current period caused by the COVID disruption.

- IV. Regarding risks, there is one slide focussing on future Portfolio risks [37]. It contains a broad discussion of risks but no mention of, for example, specific systems or programmes which are at risk of failure due to reductions in budgets and how COVID-19 or other factors could affect this. We would welcome a more detailed consideration of risks and uncertainties to be included in the future releases of the SIP. NERL has offered to reflect on this.
- V. NERL undertakes significant engagement activities with its customers and produces extensive documentation to explain its activities. The introduction of the TCAB is an example of this. Our view is that the slide-deck format of SIP21 is appropriate for reporting to its customers. We feel, however, that at 80+ pages the document is relatively long. Many of NERL's customers have limited time to engage on this issue and need to be able to quickly understand the changes to the pre-agreed programme costs, scope, milestones and delivery. A more condensed presentation of key information tracked from SIP to SIP would help. NERL has offered to engage with the IR to share ideas on project reporting dashboards.

It is also imperative that there is full traceability of programmes across documents. Where project names or milestones are changed, this must be clearly stated and explained. NERL has told us it will aim to improve consistency and traceability here.

SIP21

High-level and formatting comments

High-level comments (continued):

- VI. Although SIP20 is outside the scope of this review, we have reviewed elements of it to understand the history of programme milestones and costs. The review noted that:
 - Several of the DP En Route milestone names have changed and completion dates between SIP20 [20] and SIP21 [40] without explanation, eg "SATO for MVS" is not listed in SIP21.
 - A "SIP consultation process – draft quarterly dashboard" was introduced in SIP20 [53]. It summarised programme timescales, costs, benefits and risks (shown opposite). The dashboard has not been continued into SIP21.

Formatting/detailed comments:

- VII. The SIP report mixes performance and planning between calendar years and NERL's internal Financial Years. The start/end of Financial years is not explained but we believe it is 31 March to 1 April. For example, Safety performance, delay forecasts, environmental performance are reported in calendar years. Some Condition 10 milestones [39-42] are presented in Financial Years. Elsewhere, Condition 10 milestones [31] are presented partly in Financial Years and partly in Calendar years.

The mixed presentation is confusing. The Regulatory Period (including financial and performance aspects) is defined in Calendar years, with an annual reporting cycle in Calendar years. It would therefore be preferable to present all values in Calendar years.

NERL has told us it will continue to use FY reporting for RP3 and will provide a translation of relevant metrics for regulatory purposes.

- VIII. The base year of costs is also not stated in SIP21, and specifically whether it has changed from the RP3 Business Plan. We assume all cost are presented indexed to a specific year but it is not stated which, nor how this relates to the RP3 Business Plan (which was mostly presented in 2017 prices). In addition, we recommend the publication date of the SIP is shown on the front cover.

The SIP consultation process – draft quarterly dashboard

Programme	Overall status	Cost £m across RP3 baseline/forecast/ status	Milestones on track (x of y)/ status	Benefits on track	Risk	Commentary
Free Route Airspace	Green	28	3/4	Green	Green	Currently in the Identify phase.
Queue & Capacity Mgt	Green	14	4/4	Green	Green	Queue and Capacity Management Programme is currently in the Identify Phase of the Business Change Framework (BCF)
Systemised Airspace	Green	76	9/9	Green	Green	Systemised Airspace Programme is currently in the Identify Phase of the Business Change Framework (BCF)
IPA	Green	7	Annual	Green	Green	Currently in the Identify phase.
Domestic En Route	Green	41	Annual	Green	Green	Currently in the Identify phase.
DP En Route	Red	29	2/4	Red	Red	Delay to DP En Route deployment – Bandboxing and Splitting issue.
DP Lower	Green	205	5/5	Green	Green	DP-Lower Programme is currently in the Define Phase of the Business Change Framework (BCF).
Foursig	Green	90	1/1	Green	Green	Not yet launched.
Centres	Green	86	Annual	Green	Green	Centres and builds Programme is currently in the Identify Phase of the Business Change Framework (BCF)
Remote sites	Green			Green	Green	Remote sites Programme is currently in the Identify Phase of the Business Change Framework (BCF)
Facilities Mgt	Green			Green	Green	Currently in the Define phase of the BCF.
Information Svcs	Green			Green	Green	
Oceanic	Green			Green	Green	
Service Orientation	Green			Green	Green	
One Operation	Green			Green	Green	

High level costs summary				Summary service performance			
RP3 Baseline Em (RP3 rBP at outturn prices)	RP3 Forecast Em	Net risk (NWV) Em	Forecast plus risk Em	RP3 Safety Targets	2019 Target	Quarter (A)	End 2020 (F)
				NATS RAT points per 100,000 movements (internal)	13% reduction	1.25%	
				RP3 Service Targets			
				C2 - secs	10.8s	8.8-10.2	
				RP3 Environment Target			
				3DI	27.7	28.8-29.0	
				Key for internal target	Greater than target	Between Target (deadband)	Achieving Target

53 NERL 2020 Service and Investment Plan

Quarterly dashboard template from SIP20

SUSTAINMENT PLAN

Planned over three programmes of work: **Technical Services Sustainment (TSS)**, Facilities Management and Information Solutions.

SIP contents summary

- SIP21 provides an overview of the overarching goals of the TSS programme, stating that a “*robust and effective maintenance strategy is in place.*” [20.2]. The description of TSS on [20] shows the challenges to be addressed in balancing sustainment, but has limited information on the specific priorities of sustainment for FY21.
- The ‘Key Deliveries’ of the TSS programme are outlined in Appendix C [61], including ‘Business Driver/Benefit’ and the ‘Impact of not delivering’. [62] summarises the ‘Key Deliveries’ that did not meet the prioritisation criteria, and will therefore not be delivered in FY21. The impact of this removal is listed on [62]. The milestones of the TSS programme are displayed on [31] across the 2-year rolling plan (FY21 and FY22), and into the Remainder of RP3. [31] sets these milestones into context of the other programmes.
- Slide [42] also summarises these milestones, and their forecasted completion date. These milestones only partially align with the ‘Key Deliveries’ on [61]
- The name of the TSS programme appears to change in Appendix C [61] to the ‘Sustainment and Surveillance Programme’.
- A cost summary is provided for all programmes [36] which provides a comparison of all programme costs between Act/Fcst FY2020 and Fcast FY2021. It refers to Technical and Business Resilience programmes, and is not aligned with the naming framework of sustainment programmes that is used in SIP21.
- [20.7] states that forecast expenditure is £24m in FY21 as part of a 2 year rolling programme.
- There is no granularity on the costs of these ‘Key Deliveries’ and how they contribute to the FY21 forecast expenditure [61].
- Since the capital plans have been evolving during COVID, there is no discussion of tracking and assessing the programmes, nor whether the benefits have been achieved.

IR opinion

- It would be clearer to the readers to maintain consistent programme titles and therefore use either ‘Technical Services’ or ‘Sustainment and Surveillance’. We strongly emphasise the requirement for maintaining consistent programme titles. NERL has told us it will aim to improve consistency and traceability in future iterations of the SIP.
- In the majority of cases on slide [61], there are no deliverables listed, or explanation of the activities to be undertaken. The ‘Key Deliveries’ are justified, and the expected benefits are given, and the milestones of some of the elements are given [31, 40]. Overall, however, there is insufficient information to be able to judge implementation progress against the activities over the coming years.
- The ‘Cost Summary’ page [36] does not provide an explanation of the Technical Resilience programme, and how this is related to TSS. It would be preferable to have consistent nomenclature but also to explain the transition between old terminology and new terminology.
- The TSS Programme budget is shown, but there is no indication of the 2nd year budget, despite the ‘2-year rolling plan’ being used as a delivery framework for all programmes. NERL has informed us that the budget for the rolling 2-year plan will be included in iSIP21.

SUSTAINMENT PLAN

Planned over three programmes of work: Technical Services Sustainment, **Facilities Management (FM)** and Information Solutions.

SIP contents summary

- The SIP provides a reminder of the high-level goals of the FM programme, including "...reducing the technical load of CO2 emissions by 2024 by 30%". [20.8]
- [20.9] highlights NERL's plan to take a limited approach to this FM investment programme to meet minimum requirements, yet ensuring that for RP3 their FM expenditure is within the range of organisations of NATS' type and scale.
- Unlike the TSS programme, the 'Key Deliveries' description [63] describes the main activities to be undertaken for each project, and a justification and the expected benefits given.
- A diagram and table of FM milestones for FY21/22 and the remainder of RP3 is given on [31] and [40] respectively.
- The proposed budget for FM FY21 is £12m [20.10], and for FM and IS together for FY21 is £30m [63].
- As with other sustainment programmes the SIP describes those activities not included as a result of investment prioritisation, alongside an 'impact of not being included' [64].
- It is highlighted on [63] that the majority of FM projects for FY21 are deferred from "...2020 as part of the FM RP3 replan". These deferred projects are listed as part of activities that did not meet the prioritisation criteria [63].
- No discussion of the impact of the FM RP3 replan on the FM budget is given.

IR opinion

- The 'Key Deliveries' are described, justified with the expected benefits, and some milestones are given [31, 40]. Our view is that there is proportionate technical information to track this programme given its size.
- The FY21 forecasted expenditure is given, however, there is no indication of the 2nd year budget (even though it is a 'rolling 2-year plan'). NERL has informed us that the budget for the rolling 2-year plan will be included in iSIP21.
- Further explanation is required on why the budgets of FM and IS are given [62] as £30m, even the individual budgets of FM and IS are £12m [20] and £9m [20] respectively (a gap of £9m). NERL has explained that the £30M is for a 27-month period and acknowledged it could have been clearer. It has stated that it will ensure a dedicated check for financial correctness is conducted before future SIP releases.
- The lack of explanation of the Business and Technical Resilience programmes on the 'FY20/21 Cost Summary' slide [36], and how these relate to the FM programme, inhibits an assessment of the FM budget increase between FY21 and FY22. As with the other sustainment programmes, this unexplained change of programme naming, inhibits traceability back to the Business Plan. NERL has told us it will aim to improve consistency and traceability in future iterations of the SIP.

SUSTAINMENT PLAN

Planned over three programmes of work: Technical Services Sustainment, Facilities Management and **Information Solutions.**

SIP contents summary

- As with the other sustainment programmes, the SIP provides a reminder of the high-level IS programme goals. The key strategic themes include; *“eliminate obsolescence”* and *“secure by design”* [20.11].
- The forecasted FY21 expenditure for FY21 is £9m [20.12]. The SIP highlights that NATS have restored the IS budget from previous years, to better align with sustainment expenditure at organisations of similar scale to NATS.
- The scale of this budget restoration is not given. The “Cost Summary” slide [36], which compares FY20 and FY21 budgets, only refers Technical and Business Resilience, and no reference is made to IS.
- As with the other sustainment programmes, some milestones are given for the IS programme over FY21, 22 and RP3 Remainder, in both diagram and table format on [31] and [40] respectively.
- Like the FM programme, the ‘Key Deliveries’ description [65], in most cases, describes the main activities to be undertaken in FY21. The expected benefits of these ‘Key Deliveries’ are given and these align with the key strategic themes on slide [20].
- The SIP describes those ‘Key Deliveries’ that did not meet the prioritisation criteria, and therefore have been excluded from FY21 delivery. Each of these excluded ‘Key Deliveries’ also have an ‘impact of not being included’ [66].

IR opinion

- Given the relatively small size of the IS programme, the ‘Key Deliveries’ slide in Appendix C [65] provides a proportionate amount of technical information to track and justify the programme of activities for FY21.
- The milestones on [31] and [41] are sufficient to track the key progress on this programme.
- There is no indication of the 2nd year budget for IS, despite the sustainment programme being part of a 2-year rolling plan. NERL has informed us that the budget for the rolling 2-year plan will be included in iSIP21.
- As with the other sustainment programmes, however, there is misalignment between the ‘Key Deliveries’ and the milestones, in some instances making it unclear when a ‘Key Delivery’ is expected to be delivered within FY21. For example, when comparing the IS milestones (Figure 1) and IS ‘Key Deliveries’ (Figure 2), the ‘ADQ hosting and sustainment’ key delivery is not reflected in the IS milestones. NERL has told us it will aim to improve consistency and traceability in future iterations of the SIP.

IS		
8	Migration of content to upgrade collaboration space (New SharePoint Online - Full Solution)	Apr-21
9	Replacement of obsolete core network components (Prestwick)	Dec-21
10	STAR replacement	Mar -22

Figure 1: IS milestones (Taken from SIP21 [41])

Key Deliveries	Business Driver / Benefit
Delivery of solutions for One Operation including but not limited to resourcing and training solutions.	Enabling the One Operation programme.
ERP strategy & sustainment, end of life upgrades to maintain the platform	Supportability and sustainability. Improved functionality more efficient business processes. Improved user interface, workflow and mobile access.
Document management, business intelligence, desktop and core infrastructure services sustainment.	IS legacy escape, improved Business resilience and security, simplified support, improved ways of working and business productivity.
ADQ Hosting and sustainment	Ensure core capability and compliance of Aeronautical Data Quality
Safety Tracking And Reporting solution replacement	Regulatory driven requirement. Seeks to provide a more future proof capability.

Figure 2: IS ‘Key Deliveries’ (Taken from SIP21 [65])

AIRSPACE PLAN

The revised Airspace Plan consists of a revised set of prioritised investments scheduled across the duration of RP3. Due to the number of investments planned in RP3, we assess the Airspace Plan as a whole, and also comment on the granularity of information provided at individual investment level.

SIP contents summary

- SIP21 provides an overview of the aims of the Airspace Plan, these include “*additional capacity in regions anticipated to generate delay through 2024*” and “*improved environmental performance*” [17.4]. The SIP also highlights that there has been a descoping of the RP3 airspace plan, in light of the pandemic. The five programmes that have been stopped have had their scope integrated into the revised Airspace Plan [17.3].
- An overview of the proposed airspace investments for RP3 is provided on [18]. Further detail on the individual investments is provided in Appendix B. For the majority of the “Airspace Investments” in Appendix B, a rationale is provided for inclusion of the option in the RP3 programme, including detail on the “proposed solution”, the benefit, any dependencies, and the schedule for implementation [45 – 59].
- Some milestones for the Airspace Plan are given in the SIP, for the 2-year rolling plan (FY21 and FY22) and the Remainder of RP3. These are given as part of a milestone diagram on [31] and in a table on [38].
- [17.10] provides the expected airspace programme FY21 forecast expenditure (£13m), which has increased from £5m in 2020 [36]. For FY21, this expenditure will cover 3 key deliverables, namely, “*Free Route Deployment 1*”, “*SAIP AP6*”, and incremental “*OPS Service Enhancements*”.
- [18.12] provides some evidence on engagement regarding the development of the options for the RP3 Airspace Plan. The SIP highlights how the feedback received at a stakeholder workshop (22 October) was responded to i.e. increased priority for Gatwick TBS and subsequent inclusion in the RP3 Plan.

IR opinion

- Given the large number of investments within the Airspace Plan, the prioritisation description [17 – 18] and rationale for each ‘Airspace Investment’ [45-59] provides a proportionate amount of information to be able to justify the programme of activities for FY21 and beyond.
- The NE TMA investment, which is included under the list of ‘Priority Options’ on [18], is omitted from the list of ‘Airspace Investments’ in Appendix C. Furthermore, there is a lack of consistency between the naming of the airspace investments on [18] and in Appendix C. For example, the XMAN investment is called ‘XMAN interim’ on [18] and ‘XMAN, MASS and Arrival Streaming’ in Appendix C [50]. NERL has told us it will aim to improve consistency and traceability in future iterations of the SIP.
- The milestones on [31] and [41] are sufficient to track the key progress of the airspace programme in the short term. The ‘schedule’ provided for each of the ‘Airspace Investments’ also provides an indication of when those projects that not included in the milestone slides, are likely to be implemented [45-59].
- We request that any changes to within the “*...revised [airspace] schedule and milestones*”, due to be published as part of the quarterly update (30 April), demonstrate direct traceability back to the current set of milestones provided in SIP21 [18.16].
- As with the sustainment programme, the airspace programme only provides a budget for FY21 despite being part of a 2-year rolling plan. NERL has informed us that the budget for the rolling 2-year plan will be included in iSIP21.

OCEANIC PLAN

Due to its small size, the Oceanic Plan does not have a set of sub-programmes.

SIP contents summary

- In the Oceanic Plan description, SIP21 lists NERL's high-level oceanic goals for RP3, these include "*enhancing the organised track structure*" and "*formalising the reduction in aircraft separation*" to contribute to the implementation of the ICAO 2030 vision [29.4].
- The tasks and outputs for FY21 and FY22 Oceanic programme are listed on [29]. There is no indication of the tasks and outputs that did not meet the prioritisation criteria referred to during the "*Benefits based planning proposal*" [42].
- Unlike the other investment programmes, no forecasted expenditure is given on the Oceanic Plan introduction slide for FY21 [29]. The proposed forecast expenditure is, however, provided on the 'FY20/21 Cost Summary' slide [36] (£2m).
- 2 milestones for the Oceanic Plan are provided in the SIP, one for FY21/22 and another for the Remainder of RP3. These are displayed in a milestone diagram on [31] and in a table on [42].
- There is limited evidence of specific engagement related to the Oceanic Plan, nor any statements on how NERL have responded to Oceanic Plan engagement. However, as with the other programmes, the SIP states that "*all of these [Oceanic Plan] milestones are subject to customer consultation*" [42], which may lead to updates to the final schedule due for release on 30 April. We are aware, however, that NERL has conducted considerable engagement on its Oceanic Plan in recent years.

IR opinion

- The granularity of technical information provided is proportional to the small size of the Oceanic Plan, and sufficient to track the progress of the Plan.
- Although there is limited additional detail on the planned activities in the Appendix of the SIP, [29.10] details the tasks and outputs for FY21/22 in sufficient detail to communicate the benefit of these activities, thus providing justification for the Oceanic activities in FY21/22.
- There is a minor inaccuracy between [29.10] and the milestones on [31] and [42]. On [29.10] the "*removal of oceanic clearances*" is due to be implemented in FY22, however, the milestones on [31] and [42] list this activity finishing in Q1 2023. Milestones should be referred to in consistent years to avoid confusion. NERL has told us it will aim to improve consistency and traceability in future iterations of the SIP.

D-SESAR PROGRAMME

As the D-SESAR programme is the largest and with most changes, we split our analysis across multiple slides, the first focusing on the [contents of the SIP in relation to the D-SESAR programme](#), the second providing the IR opinion on the programme. On the subsequent two slides we reflect in detail on the costings of DSESAR.

SIP contents summary

Programme description:

- The high-level goals of the D-SESAR programme are given on [23.14], these include delivering “..a common modern platform”, “retire aging infrastructure”, and enabling the deployment of “new operational concepts” and “airspace change”.
- The high level benefits that the D-SESAR programme will enable are given in the SIP [23.15], these include benefits in the Key Performance Areas (KPA) of Resilience and Safety, as well as other benefits in terms of Costs and improving Capabilities.

Milestones/Timelines

- The impact of COVID-19 is emphasised in SIP21 as a significant disruptor to the D-SESAR programme, the specific constraints related to the pandemic are given on [23.13] including “furlough of 450 delivery staff for 6 months” and “financial constraints to maintain financial viability”.
- [24] describes the optioneering process that was undertaken by NERL, as part of revision of the DP En Route programme given the current constraints from the pandemic. A table is presented in SIP21 with the 6 options reviewed, and a traffic light system is used to identify the severity of the risks related to whether the options are deliverable, financeable and how they perform against resilience, capacity and cost efficiency KPAs.
- Option F was taken forwards by NERL, i.e. full operating service (FOS) by 2024, rather than the original plan for DP En Route of end of 2021. This decision informs the presentation of DP En Route milestones in a diagram on [25]. The pre- and post-Covid-19 programme of key deliveries are outlined on [26].
- The milestones for D-SESAR programme for FY21/22 and FY23 and beyond are given on [40]

Cost information:

- DP Lower is proposed to be removed from RP3 delivery. DP Lower was originally planned to bridge the gap between DP En Route and the transition to the common version. This is expected to provide a £200m offset to the increase in costs to DP En Route [26.34].
- The costing information for DP En Route is provided on [27]. The forecasted expenditure for DP En Route in FY21 is £55m - £60m.
- Some justification for the forecasted cost increase between the £29m Revised Business Plan estimate for DP En Route and the £240m probabilistic forecast for DP En Route post-covid completion is given on [27]. A diagram of this cost bridge is also provided on [27].
- Further detail on the major changes to the D-SESAR cost bridge is given on [68-70], including detail on the Risks Crystallised, New Requirements, Covid-19 impact major contributors and the method of devising this revised cost bridge using a Monte Carlo simulation.

Evidence of engagement

- The six options reviewed for the way-forward for DP En Route [24] were presented to customers at a Technical Delivery workshop on 5 November [23.17].
- [40] highlights that the milestones given for D-SESAR programme over RP3 are still subject to customer consultation, and “bottom up planning”. [40] states that there may be variation, which if material, will be communicated with customers.

D-SESAR PROGRAMME

As the D-SESAR programme is the largest and with most changes, we split our analysis across multiple slides, the first focusing on the contents of the SIP in relation to the D-SESAR programme, the second providing the [IR opinion on the programme](#). On the subsequent two slides we reflect in detail on the costings of DSESAR.

IR opinion

Programme Schedule:

- The lack of traceability back to the business plan from SIP21, is illustrated in the case of the D-SESAR programme. There is an expectation that the effect of the COVID-19 pandemic will lead to delays to infrastructure projects, due to reasons such as those cited in [23.13]. However, SIP21 states that *“the pre-COVID plan aimed to deploy the new DP En Route service by **the end of 2021**”* [25.29]. Although the Revised Business Plan Appendix L, stated that the delivery of DP En Route will be completed *“...in the **early part of 2020**”* (pg 118, Appendix L, Revised BP), we understand that the delay to 2021 was presented in SIP20.
- Given the DP En Route programme was meant to be completed in 2021, it is assumed that this project was in the advanced stages of delivery when lockdown measures were introduced in the UK (16 March 2020). Therefore, even when considering the impact of COVID [23.13 & 69], it is difficult for the reader to understand what actions were remaining to be completed to finalise implementation, and at what point it became necessary to delay to 2024. To facilitate this understanding, we recommend that NERL ensure alignment with the DP En Route milestones given in SIP20, for example “Flight Intention Service RFU” and “Final iTEC build for DP ER”, do not appear in the SIP21 milestones [40].
- The milestones provided for the revised DP En Route programme on [31] and [40] are sufficient to track the timeliness of the programme in the future. However, there is no explanation as to why the milestones for DP En Route on [40] come under the title of “Delivering Capability” rather than DP En Route.
- SIP21 states that the proposed DP En Route milestones may change following further consultation [40].

D-SESAR cost proposal:

Our understanding of the D-SESAR cost proposal is given on the following slides, additional IR opinion points are listed below.

- As with the other programmes in SIP21, there is no detail on the costings of the individual deliveries and milestones on [31] and [40]. In the case of D-SESAR this information would help justify the anticipated expenditure of £55m - £60m for DP En Route in FY21 [27.44].
- The inclusion of the “RP2 CAPEX DP En Route cost” on [27] is redundant. The RP2 capex cost will have come from a distinct set of deliveries, and will have been completed without the effects of Covid-19. This figure does not help justify the probabilistic forecast for the RP3 DP En Route Programme.
- As with the scheduling of large investment programmes, such as DP En Route, there is an expectation that the impact of COVID will cause significant financial disruption. However, the magnitude of the increase in forecasted cost for DP En Route brings into question the accuracy of the original forecasting process.

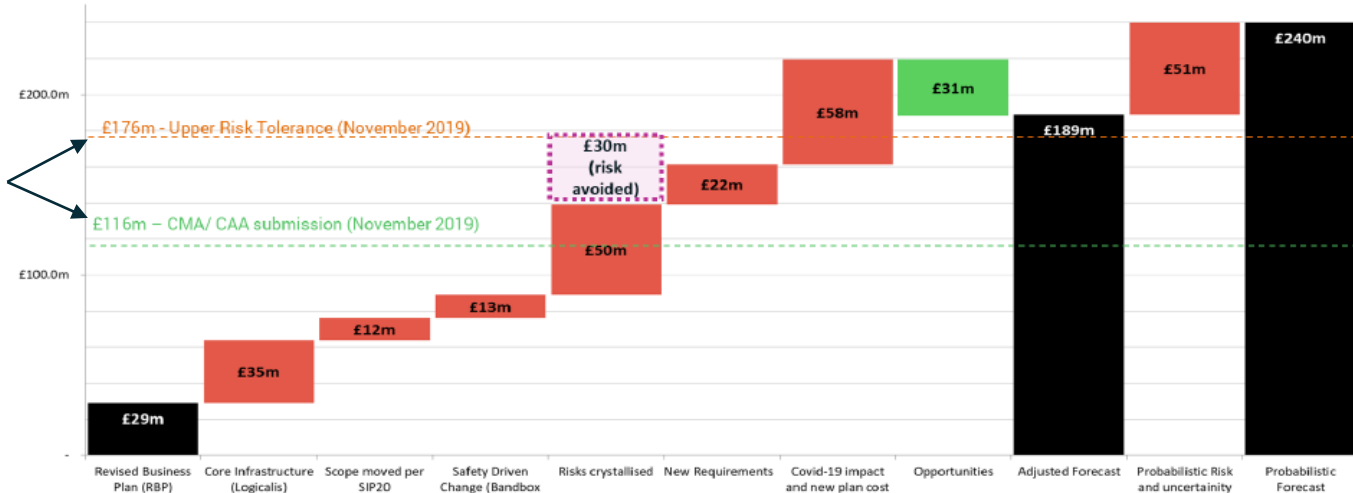
Other information:

- Beside the changes in costs, the significant delays in the programme are not explained. DP En Route is delayed from 2021 to 2024. However in [26], the ‘Prestwick upper airspace (iTEC v1) Transition 1’ timing appears to be unmoved in the ‘Pre-COVID-19’ and ‘Post-COVID-19’ plans. Our view is that it is difficult to relate the milestones on [25] to the timing diagram on [26].

D-SESAR COST BRIDGE

An area for particular consideration is the granularity of the detail provided to justify the DP En Route cost-bridge on [27]. SIP21 provides the following detail on the cost-bridge components.

The source of these two lines is not clear. We understand the green one was 'presented to the CAA/CMA' but the references are not given.



Core infrastructure – This is referenced on [27.40] as an increasing delay with full consequences increasing from £25m to £35m. The reason for this delay is not given in SIP21. However SIP20, provides some discussion of this increase [26.3 SIP20] noting that the “scale of full solution evolved as the plan matured”.

Scope moved per SIP20 – This is referenced within SIP20 [25.2] “as would be expected in a plan of this complexity there has been some scope growth in RP2. However, no further detail is given in SIP21.

Safety Driven Change – There is no discussion of this safety driven change within SIP21. SIP20 provides reference to this change on [20.4] and [49].

Risks crystallised – These are discussed in detail on [68] of SIP21. However there is no information on the respective cost contributions of these individual risks or of why NERL could not foresee/manage them.

COVID-19 impact – The COVID-19 impact factors are discussed on [69], however, there is no detail on the individual contribution of these factors to the £58m cost estimate for this component.

New Requirements – These are discussed on [69] in SIP21, however, with no detail on the individual contribution of these requirements to the £22m cost estimate for this component.

Given the significant cost contributions for each of the components within the cost-bridge, we believe the **detail provided in SIP21 is insufficient to explain or justify them.**

D-SESAR COST BRIDGE (CONTINUED)

The slide outlines our understanding of the uncertainties in the DP En Route cost increase, including the P90 forecast. Elements of the approach are not clear and we have given some questions for NERL.

Our understanding

There is a large range of potential costs for the DP En Route programme, from the adjusted to probabilistic forecasts (£51m). We have gathered the following understanding from [27] and [70] on these two forecasts.

- The additional opportunities (£31m) are included in the Adjusted Forecast [70.5] of £189m. A description of the nature of these opportunities is not given in SIP21.
- [70] provides some detail on how the P90 estimate is calculated: using a Monte Carlo simulation to determine the most likely outcomes at different probabilities for a range of inputs, based on the current schedule of information.
- [70.6] states that the modelled uncertainty, indicates a range of around £50m from base cost £189m to £240m. Therefore we assume that there is a 10% chance for DP En Route to cost exceed £240m
- NERL has conducted [70.4] a qualitative risk analysis to determine this probabilistic forecast. This qualitative step should be included in future SIPs, to provide information on what these probabilistic risks are.
- It is assumed that as part of this £189m base estimate, £42m has already been spent since the start of RP3 (see Figure 2). This is assumed to relate to the "progress to date" points on [22. 5-11].

Discussions with NERL

- Given that all opportunities have been included in the Adjusted Forecast (£189m) and "only the threats to the programme were modelled" [70.5], does this mean it is a 'best case' being measured for each metric? Following review of the references provided on [70.4], this does not appear to be the intended use of this risk analysis technique. The examples provided show a two way forecast range (up and down) not 'upwards only'.
- On [26.34], SIP21 states that "removing DP Lower would provide a considerable offset (approx. £200m) to the increase in costs to DP En Route". It was not clear if it was in the cost bridge on [27] and NERL has clarified that it is not.
- We asked for clarification on the 'additional opportunities' and NERL gave detail on 3 items: Transfer out of DPER, Deferrals and Savings which explain this
- We asked NERL if there was a risk that the £31m opportunities might not be fully realised and it said that there was some risk of this but it feels the worst-case scenario is unlikely.
- We questioned if the £189M "Adjusted Forecast" figure was a "P10" (Figure 1) and NERL stated it is P0.
- NERL has provided some clarifications and offered to refine its approach for future SIP iterations.

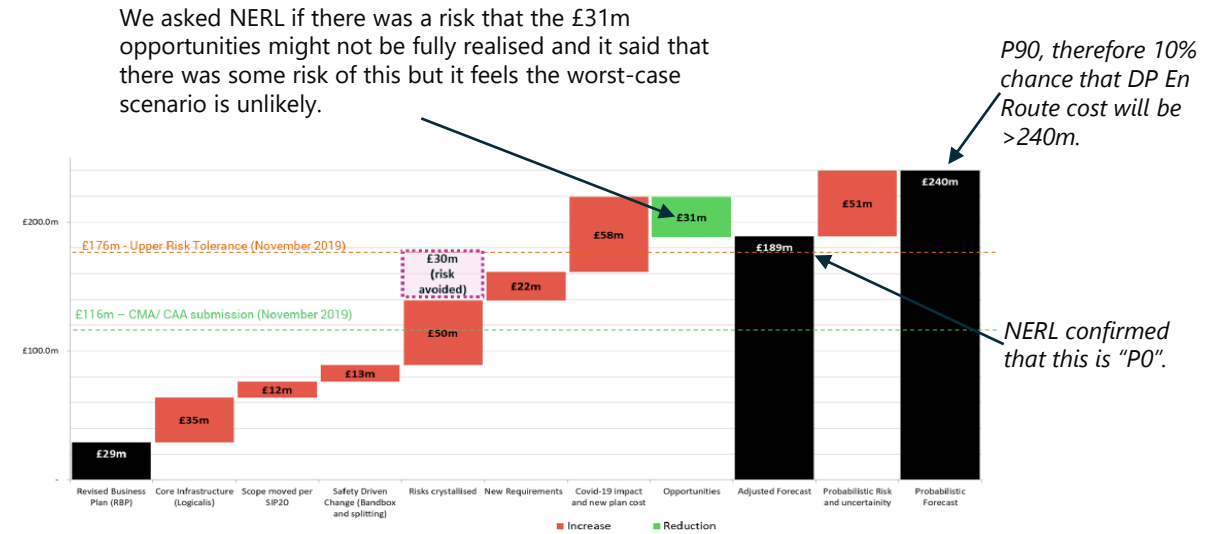


Figure 1 – Annotated D-SESAR cost bridge diagram, taken from [27].

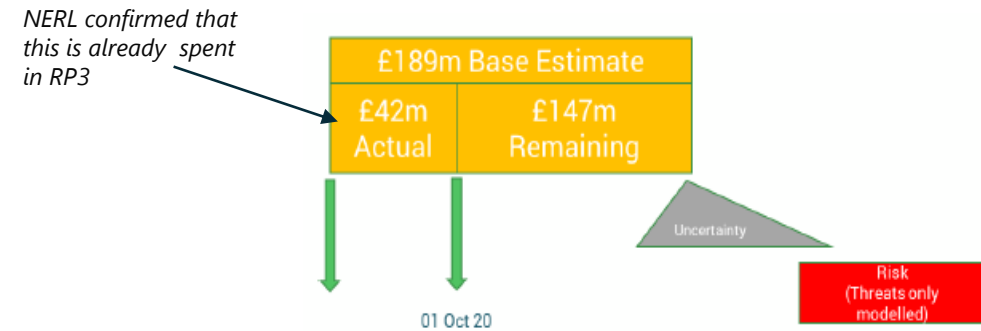


Figure 2 – Annotated probabilistic forecast methodology diagram, taken from [70].

ENGAGEMENT

Future IR reviews will include an assessment and scoring against the engagement criteria set out in the NERL licence Condition 10 paragraph 8. For SIP21, however, we provide indicative comments against the engagement criteria. The future assessment/scoring process will be conducted against individual programmes/projects to be agreed with the CAA.

Timeliness

- The summary of milestones on [31] provides a framework through which future timeliness can be easily assessed. There is clear evidence of engagement on these milestones at customer workshops on 22nd Oct and 5th Nov 2020.
- The timeliness of early warnings regarding delays to the D-SESAR programme is unclear. SIP20 states that Prestwick DP En Route was on target for 'February/March 21" [50] and iSIP20 states that it "could bring the deployments into May 2022 (Prestwick)" [9] even though it is now delayed to "Q4-2024" (SIP21[40]).

User-focus

- The TCAB (Technical Consultation Advisory Board) established by NERL is a good example of engagement in the more technical aspects of capex plan developments.
- The slide format used for SIP21 is an accessible format. However, in its current form, key information that customers require may be lost in the long document. A summary dashboard for each programme, as described earlier, would provide an easier way to track progress.

Proportionality

- Different programmes show different levels of proportionality in their data provision. The greater detail on the DSESAR and the Airspace Plan and lower detail on other programmes is proportionate.

Optioneering

- There is good evidence of optioneering for the reassessment of the D-SESAR programme in light of COVID-19 [24]. The slide provides evidence and reasoning behind why "Option F" was chosen over 5 others. This remains, however, a basic qualitative description of the optioneering process and there is no explicit consideration of opex interactions.
- SIP21 also presents a qualitative optioneering process for the sustainment programmes, although this would benefit from more quantitative information.

Responsiveness

- Having reviewed the user submission and NERL responses on the customer portal, where dated, the NERL response is timely (usually within 2-3 weeks). The responses from NERL are detailed, and all elements of the customer letters are addressed. This written customer engagement is clearly categorised on the customer portal, and historical engagement is easily accessible.

Mitigating & corrective actions

- SIP21 [3] presents a clear summary of the changes that have been made to SIP21 following customer consultation, which have references to the respective places within the SIP.

Next steps

- Ahead of the release of future SIPs, we will engage with the CAA and NERL regarding the programmes and projects that will be assessed and scored under the engagement criteria.
- We will engage with NERL as to how it can present evidence of compliance with the engagement criteria to facilitate scoring. NERL has told us it will work with us on this.

CONCLUSIONS AND RECOMMENDATIONS

Our primary conclusions and recommendations are presented below. Detailed conclusions for specific programmes are presented in the main text and not repeated here.

Document format

Our view is that the slide-deck format of SIP21 is a good one for the information in the SIP. We feel, however, that the document is relatively long and does not sufficiently highlight the key information. Many of NERL's customers have limited time to engage on this issue and need to be able to quickly understand progress against plan. We recommend that NERL consider ways to present key information more clearly (see below).

Programme dashboards

It would benefit NERL's customers to have a common format summarising each programme and its status. This will enable customers to easily track programme plans against progress. A 'programme dashboard' could contain this; it would be updated each quarter and the format maintained for the regulatory period. We anticipate 1 to 2 pages per programme. We recommend that NERL use such a format and NERL has offered to work with us to agree this format for future SIPs. To support this it is important that programme titles and definitions do not change without explanation, and data is presented consistently in calendar/financial years and in prices at stated years.

Engagement

In the future, when engagement criteria are scored, it would be beneficial to have all the evidence of engagement for each programme. We recommend that NERL summarises its evidence of engagement for each programme in future SIPs and we will engage with NERL on this topic. The programmes to be scored have not been decided by the CAA.

Capex baseline

When NERL produces its capex baseline, it will need to demonstrate the links to the RP3 business plan and show both historical spend and future plans in RP3. We recognise that there have been significant changes to the scope of the capex programme due to the impact of the Covid-19 pandemic. There is, however, a lack of clarity regarding how programme budget, programme scope and timelines have changed between the revised business plan and SIP21 (e.g. DP En Route completion date). We recommend that this traceability is improved in the revised capex baseline. The example on page 5 (III) of Facilities Management illustrates the importance of this. NERL has told us it will improve consistency and traceability in its reporting of programmes, projects and milestones.

Use of a 2-year rolling plan

Although SIP21 describes a use of 2-year rolling plan, key data from the 2nd year is missing (eg cost). If a 2 year plan is retained then the programme dashboards described above could ensure that the 2nd year is properly reported. NERL has informed us that iSIP21 will include the budget for the the rolling 2-year plan.

DP En Route programme

A significant description is given of the needs to change the DP En Route programme and the options to do so. Nevertheless, the DP En Route cost bridge explanation has several significant shortcomings, outlined on pages 11 - 13. Overall, DP En Route is subject to considerable cost increases and significant delays. We recommend further explanation of the cost bridge are presented in the capex baseline and also the calculation of the P90 value. We also recommend that the reasons for the delay from 2021 to 2024 are better explained. NERL has offered to refine its approach in future SIP iterations.

NERL Licence Condition 10

Due to the disruption of COVID-19, there is a risk that some of the requirements of Condition 10 will not be met. We recommend that NERL demonstrate that all of the information required of Condition 10 is available although it may not be provided in the same documentary form as usual.

Level and quality of services

The NERL license requires information to be provided on the level and quality of services that NERL will provide. We recommend that NERL provide information on its planning assumptions (eg traffic) for RP3 and the implications on its service levels if the recoveries are outside this range. We believe that NERL's customers will want to know the service levels that could be delivered (and implications on opex) under different future scenarios.

Risks

Regarding risks, there is one slide focussing on future Portfolio risks [37]. It contains a broad discussion of risks but no mention of, for example, specific systems or programmes which are at risk of failure due to reductions in budgets and how COVID-19 or other factors could affect this. NERL has offered to reflect on this.

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